



PATENT ABSTRACTS OF JAPAN

(11) Publication number: **63171355 A**(43) Date of publication of application: **15.07.1988**

(51) Int. Cl. **G01N 27/30**
G01N 27/00
// H01L 29/78

(21) Application number: **62001674**(22) Date of filing: **09.01.1987**

(71) Applicant: **SEITAI KINOU RIYOU**
KAGAKUHN SHINSEIZOU
GIJUTSU KENKYU KUMIAI

(72) Inventor: **TSUKADA KEIJI**
MIYAHARA YUJI
MIYAGI HIROYUKI

(54) **SEMICONDUCTOR CHEMICAL SENSOR**

(57) Abstract:

PURPOSE: To examine a minute specimen, by forming a hydrophobic polymer membrane on the insulating gate film of IGFET formed on the same substrate and further exposing said polymer membrane to electrically accelerated particles.

CONSTITUTION: Two FETs are formed on an Si substrate and each of them is constituted of a drain 2, a source 3 and an insulating gate consisting of an SiO₂ insulating film 4 and an Si₃N₄ insulating film 5. Further, a hydrophobic polymer film (polystyrene) 6 is formed on the insulating gate by a plasma polymerization method and an argon ion of accelerated energy is allowed to irradiate only the polymer film 6 on the insu-

lating gate of one FET to form an irradiation treatment surface 7 and this FET is set to ISFET (ion-sensitive FET). Next, the remaining FET not subjected to ion irradiation treatment is set to REFET (reference FET) and a silver-silver chloride electrode 8 is formed on the insulating film 5 not belonging to both of ISFET and REFET on the substrate 1. By using this semiconductive chemical sensor, a minute specimen can be examined.

COPYRIGHT: (C)1988,JPO&Japio

